



Inventors: Gurney et al.

Title: "Alzheimer's Disease Secretase, APP Substrates
Therefor, and Uses Therefor"

Atty. Ref.: 29915/6280NCP

Phone No.: (312) 474-6300

Fig. 1A

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FIGURE 1A

ATGGGCGCACTGGCCCCGGGCGCTGCTGCTGCCTCTGCTGGCCCAGTGGCTCCTGCGCGCC
M G A L A R A L L L P L L A Q W L L R A
CCCCGGAGCTGGCCCCCGCGCCCTTCACGCTGCCCCCTCCGGGTGGCCGCGGCCACGAAC
A P E L A P A P F T L P L R V A A A T N
CGCGTAGTTGCGCCCACCCCGGGACCCGGGACCCCTGCCGAGCGCCACGCCGACGGCTTG
R V V A P T P G P G T P A E R H A D G L
GCGCTCGCCCTGGAGCCTGCCCTGGCGTCCCCCGCGGGCGCCGCAACTTCTTGGCCATG
A L A L E P A L A S P A G A A N F L A M
GTAGACAACCTGCAGGGGGACTCTGGCCGCGGCTACTACCTGGAGATGCTGATCGGGACC
V D N L Q G D S G R G Y Y L E M L I G T
CCCCCGCAGAAGCTACAGATTCTCGTTGACACTGGAAGCAGTAACTTTGCCGTGGCAGGA
P P Q K L Q I L V D T G S S N F A V A G
ACCCCGCACTCCTACATAGACACGTACTTTGACACAGAGAGGTCTAGCACATACCGCTCC
T P H S Y I D T Y F D T E R S S T Y R S
AAGGGCTTTGACGTCACAGTGAAGTACACACAAGGAAGCTGGACGGGCTTCGTTGGGGAA
K G F D V T V K Y T Q G S W T G F V G E
GACCTCGTCACCATCCCCAAAGGCTTCAATACTTCTTTTCTTGTCAACATTGCCACTATT
D L V T I P K G F N T S F L V N I A T I
TTTGAATCAGAGAATTTCTTTTTCCTGGGATTAAATGGAATGGAATACTTGGCCTAGCT
F E S E N F F L P G I K W N G I L G L A
TATGCCACACTTGCCAAGCCATCAAGTTCTCTGGAGACCTTCTTCGACTCCCTGGTGACA
Y A T L A K P S S S L E T F F D S L V T
CAAGCAAACATCCCCAACGTTTTCTCCATGCAGATGTGTGGAGCCGGCTTGCCCGTTGCT
Q A N I P N V F S M Q M C G A G L P V A
GGATCTGGGACCAACGGAGGTAGTCTTGTCTTGGGTGGAATTGAACCAAGTTTGTATAAA
G S G T N G G S L V L G G I E P S L Y K
GGAGACATCTGGTATACCCCTATTAAGGAAGAGTGGTACTACCAGATAGAAATTCTGAAA
G D I W Y T P I K E E W Y Y Q I E I L K
TTGGAAATTGGAGGCCAAAGCCTTAATCTGGACTGCAGAGAGTATAACGCAGACAAGGCC
L E I G G Q S L N L D C R E Y N A D K A
ATCGTGGACAGTGGCACCACGCTGCTGCGCCTGCCCCAGAAGGTGTTTGATGCGGTGGTG
I V D S G T T L L R L P Q K V F D A V V
GAAGCTGTGGCCCGCGCATCTCTGATTCCAGAATTCTCTGATGGTTTCTGGACTGGGTCC
E A V A R A S L I P E F S D G F W T G S
CAGCTGGCGTGCTGGACGAATTCGGAAACACCTTGGTCTTACTTCCCTAAAATCTCCATC
Q L A C W T N S E T P W S Y F P K I S I
TACCTGAGAGATGAGAACTCCAGCAGGTCAATCCGTATCACAATCCTGCCTCAGCTTTAC
Y L R D E N S S R S F R I T I L P Q L Y
ATTGAGCCCATGATGGGGGCGGCCTGAATTATGAATGTTACCGATTCTGGCATTTCCTCCA
I Q P M M G A G L N Y E C Y R F G I S P

FIGURE 1B

TCCACAAATGCGCTGGTGATCGGTGCCACGGTGATGGAGGGCTTCTACGTCATCTTCGAC
S T N A L V I G A T V M E G F Y V I F D
AGAGCCCAGAAGAGGGTGGGCTTCGCAGCGAGCCCCTGTGCAGAAATTGCAGGTGCTGCA
R A Q K R V G F A A S P C A E I A G A A
GTGTCTGAAATTTCCGGGCCTTTCTCAACAGAGGATGTAGCCAGCAACTGTGTCCCCGCT
V S E I S G P F S T E D V A S N C V P A
CAGTCTTTGAGCGAGCCCATTTTGTGGATTGTGTCCTATGCGCTCATGAGCGTCTGTGGA
Q S L S E P I L W I V S Y A L M S V C G
GCCATCCTCCTTGTCTTAATCGTCCTGCTGCTGCTGCCGTTCCGGTGTGAGCGTCGCCCC
A I L L V L I V L L L L P F R C Q R R P
CGTGACCCTGAGGTCGTCAATGATGAGTCCTCTCTGGTCAGACATCGCTGGAAATGAATA
R D P E V V N D E S S L V R H R W K

GCCAGGCCTGACCTCAAGCAACCATGAACTCAGCTATTAAGAAAATCACATTTCCAGGGC
AGCAGCCGGGATCGATGGTGGCGCTTTCTCCTGTGCCACCCGTCTTCAATCTCTGTTCT
GCTCCCAGATGCCTTCTAGATTCACTGTCTTTTGATTCTTGATTTTCAAGCTTTCAAATC
CTCCCTACTTCCAAGAAAAATAATTAAAAAAAACCTTCATTCTAAACCAAAAAAAAAAAAA
AAAA

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Fig. 2A

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FIGURE 2A

ATGGCCCAAGCCCTGCCCTGGCTCCTGCTGTGGATGGGCGCGGGAGTGCTGCCTGCCCAC
M A Q A L P W L L L W M G A G V L P A H
GGCACCCAGCACGGCATCCGGCTGCCCCTGCGCAGCGGCCTGGGGGGCGCCCCCTGGGG
G T Q H G I R L P L R S G L G G A P L G
CTGCGGCTGCCCCGGGAGACCGACGAAGAGCCCCGAGGAGCCCCGGCCGGAGGGGGCAGCTTT
L R L P R E T D E E P E E P G R R G S F
GTGGAGATGGTGGACAACCTGAGGGGCAAGTCGGGGCAGGGCTACTACGTGGAGATGACC
V E M V D N L R G K S G Q G Y Y V E M T
GTGGGCAGCCCCCGCAGACGCTCAACATCCTGGTGGATACAGGCAGCAGTAACTTTGCA
V G S P P Q T L N I L V D T G S S N F A
GTGGGTGCTGCCCCCCCACCCCTTCCTGCATCGCTACTACCAGAGGCAGCTGTCCAGCACA
V G A A P H P F L H R Y Y Q R Q L S S T
TACCGGGACCTCCGGAAGGGTGTGTATGTGCCCTACACCCAGGGCAAGTGGGAAGGGGAG
Y R D L R K G V Y V P Y T Q G K W E G E
CTGGGCACCGACCTGGTAAGCATCCCCCATGGCCCCAACGTCACCTGTGCGTGCCAACATT
L G T D L V S I P H G P N V T V R A N I
GCTGCCATCACTGAATCAGACAAGTTCTTCATCAACGGCTCCAACCTGGGAAGGCATCCTG
A A I T E S D K F F I N G S N W E G I L
GGGCTGGCCTATGCTGAGATTGCCAGGCTTTGTGGTGCTGGCTTCCCCCTCAACCAGTCT
G L A Y A E I A R L C G A G F P L N Q S
GAAGTGCTGGCCTCTGTCGGAGGGAGCATGATCATTGGAGGTATCGACCACTCGCTGTAC
E V L A S V G G S M I I G G I D H S L Y
ACAGGCAGTCTCTGGTATACACCCATCCGGCGGGAGTGGTATTATGAGGTGATCATTGTG
T G S L W Y T P I R R E W Y Y E V I I V
CGGGTGGAGATCAATGGACAGGATCTGAAAATGGACTGCAAGGAGTACAACCTATGACAAG
R V E I N G Q D L K M D C K E Y N Y D K
AGCATTGTGGACAGTGGCACCACCAACCTTCGTTTGCCCAAGAAAGTGTTTGAAGCTGCA
S I V D S G T T N L R L P K K V F E A A
GTCAAATCCATCAAGGCAGCCTCCTCCACGGAGAAGTTCCTGATGGTTTCTGGCTAGGA
V K S I K A A S S T E K F P D G F W L G
GAGCAGCTGGTGTGCTGGCAAGCAGGCACCACCCCTTGGAACATTTTCCCAGTCATCTCA
E Q L V C W Q A G T T P W N I F P V I S
CTCTACCTAATGGGTGAGGTTACCAACCAGTCCTTCCGCATCACCATCCTTCCGCAGCAA
L Y L M G E V T N Q S F R I T I L P Q Q
TACCTGCGGCCAGTGGAAGATGTGGCCACGTCCCAAGACGACTGTTACAAGTTTGCCATC
Y L R P V E D V A T S Q D D C Y K F A I
TCACAGTCATCCACGGGCACTGTTATGGGAGCTGTTATCATGGAGGGCTTCTACGTTGTC
S Q S S T G T V M G A V I M E G F Y V V
TTTGATCGGGCCCGAAAACGAATTGGCTTTGCTGTCAGCGCTTGCCATGTGCACGATGAG
F D R A R K R I G F A V S A C H V H D E

FIGURE 2B

TTCAGGACGGCAGCGGTGGAAGGCCCTTTTGTACCTTGGACATGGAAGACTGTGGCTAC
F R T A A V E G P F V T L D M E D C G Y
AACATTCCACAGACAGATGAGTCAACCCTCATGACCATAGCCTATGTCATGGCTGCCATC
N I P Q T D E S T L M T I A Y V M A A I
TGCGCCCTCTTCATGCTGCCACTCTGCCTCATGGTGTGTGTCAGTGGCGCTGCCTCCGCTGC
C A L F M L P L C L M V C Q W R C L R C
CTGCGCCAGCAGCATGATGACTTTGCTGATGACATCTCCCTGCTGAAGTGAGGAGGCCCA
L R Q Q H D D F A D D I S L L K

TGGGCAGAAGATAGAGATTCCCCTGGACCACACCTCCGTGGTTCACCTTTGGTCACAAGTA
GGAGACACAGATGGCACCTGTGGCCAGAGCACCTCAGGACCCTCCCCACCCACCAAATGC
CTCTGCCTTGATGGAGAAGGAAAAGGCTGGCAAGGTGGGTTCAGGGACTGTACCTGTAG
GAAACAGAAAAGAGAAGAAAGAAGCACTCTGCTGGCGGGAATACTCTTGGTCACCTCAAA
TTTAAGTCGGGAAATTCTGCTGCTTGAACTTCAGCCCTGAACCTTTGTCCACCATTTCCT
TTAAATTCTCCAACCCAAAGTATTCTTCTTTTCTTAGTTTCAGAAGTACTGGCATCACAC
GCAGGTTACCTTGGCGTGTGTCCCTGTGGTACCCTGGCAGAGAAGAGACCAAGCTTGTTT
CCCTGCTGGCCAAAGTCAGTAGGAGAGGATGCACAGTTTGCTATTTGCTTTAGAGACAGG
GACTGTATAACAAGCCTAACATTGGTGCAAAGATTGCCTCTTGAAAAAAAAAAAAA

FIGURE 3A

ATGGCCCAAGCCCTGCCCTGGCTCCTGCTGTGGATGGGCGCGGGAGTGCTGCCTGCCCAC
M A Q A L P W L L L W M G A G V L P A H
GGCACCCAGCACGGCATCCGGCTGCCCCTGCGCAGCGGCCTGGGGGGCGCCCCCCTGGGG
G T Q H G I R L P L R S G L G G A P L G
CTGCGGCTGCCCCGGGAGACCGACGAAGAGCCCCGAGGAGCCCCGGCCGGAGGGGCAGCTTT
L R L P R E T D E E P E E P G R R G S F
GTGGAGATGGTGGACAACCTGAGGGGCAAGTCGGGGCAGGGCTACTACGTGGAGATGACC
V E M V D N L R G K S G Q G Y Y V E M T
GTGGGCAGCCCCCGCAGACGCTCAACATCCTGGTGGATACAGGCAGCAGTAACTTTGCA
V G S P P Q T L N I L V D T G S S N F A
GTGGGTGCTGCCCCCCCACCCCTTCCTGCATCGCTACTACCAGAGGCAGCTGTCCAGCACA
V G A A P H P F L H R Y Y Q R Q L S S T
TACCGGGACCTCCGGAAGGGTGTGTATGTGCCCTACACCCAGGGCAAGTGGGAAGGGGAG
Y R D L R K G V Y V P Y T Q G K W E G E
CTGGGCACCGACCTGGTAAGCATCCCCCATGGCCCCAACGTCACTGTGCGTGCCAACATT
L G T D L V S I P H G P N V T V R A N I
GCTGCCATCACTGAATCAGACAAGTTCTTCATCAACGGCTCCAACCTGGGAAGGCATCCTG
A A I T E S D K F F I N G S N W E G I L
GGGCTGGCCTATGCTGAGATTGCCAGGCCTGACGACTCCCTGGAGCCTTTCTTTGACTCT
G L A Y A E I A R P D D S L E P F F D S
CTGGTAAAGCAGACCCACGTTCCCAACCTCTTCTCCCTGCAGCTTTGTGGTGCTGGCTTC
L V K Q T H V P N L F S L Q L C G A G F
CCCCTCAACCAGTCTGAAGTGCTGGCCTCTGTCTGGAGGGAGCATGATCATTGGAGGTATC
P L N Q S E V L A S V G G S M I I G G I
GACCACTCGCTGTACACAGGCAGTCTCTGGTATAACCCATCCGGCGGGAGTGGTATTAT
D H S L Y T G S L W Y T P I R R E W Y Y
GAGGTCATCATTGTGCGGGTGGAGATCAATGGACAGGATCTGAAAATGGACTGCAAGGAG
E V I I V R V E I N G Q D L K M D C K E
TACAACCTATGACAAGAGCATTGTGGACAGTGGCACCACCAACCTTCGTTTGCCCAAGAAA
Y N Y D K S I V D S G T T N L R L P K K
GTGTTTGAAGCTGCAGTCAAATCCATCAAGGCAGCCTCCTCCACGGAGAAGTTCCCTGAT
V F E A A V K S I K A A S S T E K F P D
GGTTTCTGGCTAGGAGAGCAGCTGGTGTGCTGGCAAGCAGGCACCACCCCTTGGAACATT
G F W L G E Q L V C W Q A G T T P W N I
TTCCCAGTCATCTCACTCTACCTAATGGGTGAGGTTACCAACCAGTCCTTCCGCATCACC
F P V I S L Y L M G E V T N Q S F R I T
ATCCTTCCGCAGCAATACCTGCGGCCAGTGGAAGATGTGGCCACGTCCCAAGACGACTGT
I L P Q Q Y L R P V E D V A T S Q D D C
TACAAGTTTGCCATCTCACAGTCATCCACGGGCACTGTTATGGGAGCTGTTATCATGGAG
Y K F A I S Q S S T G T V M G A V I M E

FIGURE 3B

GGCTTCTACGTTGTCTTTGATCGGGCCCCGAAAACGAATTGGCTTTGCTGTCAGCGCTTGC
G F Y V V F D R A R K R I G F A V S A C
CATGTGCACGATGAGTTCAGGACGGCAGCGGTGGAAGGCCCTTTTGTACCTTGGACATG
H V H D E F R T A A V E G P F V T L D M
GAAGACTGTGGCTACAACATTCCACAGACAGATGAGTCAACCCTCATGACCATAGCCTAT
E D C G Y N I P Q T D E S T L M T I A Y
GTCATGGCTGCCATCTGCGCCCTCTTCATGCTGCCACTCTGCCTCATGGTGTGTCAGTGG
V M A A I C A L F M L P L C L M V C Q W
CGCTGCCTCCGCTGCCTGCGCCAGCAGCATGATGACTTTGCTGATGACATCTCCCTGCTG
R C L R C L R Q Q H D D F A D D I S L L
AAGTGAGGAGGCCCATGGGCAGAAGATAGAGATTCCCCTGGACCACACCTCCGTGGTTCA
K

CTTTGGTCACAAGTAGGAGACACAGATGGCACCTGTGGCCAGAGCACCTCAGGACCCTCC
CCACCCACCAAATGCCTCTGCCTTGATGGAGAAGGAAAAGGCTGGCAAGGTGGGTTCAG
GGACTGTACCTGTAGGAAACAGAAAAGAGAAGAAAGAAGCACTCTGCTGGCGGGAATACT
CTTGGTCACCTCAAATTTAAGTCGGGAAATTCTGCTGCTTGAAACTTCAGCCCTGAACCT
TTGTCCACCATTCTTTTAAATTCTCCAACCCAAAGTATTCTTCTTTTCTTAGTTTCAGAA
GTACTGGCATCACACGCAGGTTACCTTGGCGTGTGTCCCTGTGGTACCCTGGCAGAGAAG
AGACCAAGCTTGTTTCCCTGCTGGCCAAAGTCAGTAGGAGAGGATGCACAGTTTGCTATT
TGCTTTAGAGACAGGGACTGTATAACAAGCCTAACATTGGTGCAAAGATTGCCTCTTGA
ATTAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

FIGURE 4

ATGGCCCCAGCGCTGCACTGGCTCCTGCTATGGGTGGGCTCGGGAATGCTGCCTGCCCAG
M A P A L H W L L L W V G S G M L P A Q
GGAACCCATCTCGGCATCCGGCTGCCCCTTCGCAGCGGCCTGGCAGGGCCACCCCTGGGC
G T H L G I R L P L R S G L A G P P L G
CTGAGGCTGCCCCGGGAGACTGACGAGGAATCGGAGGAGCCTGGCCGGAGAGGCAGCTTT
L R L P R E T D E E S E E P G R R G S F
GTGGAGATGGTGGACAACCTGAGGGGAAAGTCCGGCCAGGGCTACTATGTGGAGATGACC
V E M V D N L R G K S G Q G Y Y V E M T
GTAGGCAGCCCCCACAGACGCTCAACATCCTGGTGGACACGGGCAGTAGTAACCTTTGCA
V G S P P Q T L N I L V D T G S S N F A
GTGGGGGCTGCCCCACACCCTTTCCTGCATCGCTACTACCAGAGGCAGCTGTCCAGCACA
V G A A P H P F L H R Y Y Q R Q L S S T
TATCGAGACCTCCGAAAGGGTGTGTATGTGCCCTACACCCAGGGCAAGTGGGAGGGGGAA
Y R D L R K G V Y V P Y T Q G K W E G E
CTGGGCACCGACCTGGTGGAGCATCCCTCATGGCCCCAACGTCACTGTGCGTGCCAACATT
L G T D L V S I P H G P N V T V R A N I
GCTGCCATCACTGAATCGGACAAGTTCTTCATCAATGGTTCCAACCTGGGAGGGGCATCCTA
A A I T E S D K F F I N G S N W E G I L
GGGCTGGCCTATGCTGAGATTGCCAGGCCCGACGACTCTTTGGAGCCCTTCTTTGACTCC
G L A Y A E I A R P D D S L E P F F D S
CTGGTGAAGCAGACCCACATTCCCAACATCTTTTCCCTGCAGCTCTGTGGCGCTGGCTTC
L V K Q T H I P N I F S L Q L C G A G F
CCCCTCAACCAGACCGAGGCACTGGCCTCGGTGGGAGGGAGCATGATCATTGGTGGTATC
P L N Q T E A L A S V G G S M I I G G I
GACCACTCGCTATACACGGGCAGTCTCTGGTACACACCCATCCGGCGGGAGTGGTATTAT
D H S L Y T G S L W Y T P I R R E W Y Y
GAAGTGATCATTGTACGTGTGGAAATCAATGGTCAAGATCTCAAGATGGACTGCAAGGAG
E V I I V R V E I N G Q D L K M D C K E
TACAACTACGACAAGAGCATTGTGGACAGTGGGACCACCAACCTTCGCTTGCCCAAGAAA
Y N Y D K S I V D S G T T N L R L P K K
GTATTTGAAGCTGCCGTCAAGTCCATCAAGGCAGCCTCCTCGACGGAGAAGTTCCCGGAT
V F E A A V K S I K A A S S T E K F P D
GGCTTTTGGCTAGGGGAGCAGCTGGTGTGCTGGCAAGCAGGCACGACCCCTTGGAACATT
G F W L G E Q L V C W Q A G T T P W N I
TTCCCAAGTCATTTCACTTTACCTCATGGGTGAAGTCACCAATCAGTCCTTCCGCATCACC
F P V I S L Y L M G E V T N Q S F R I T
ATCCTTCTCAGCAATACCTACGGCCGGTGGAGGACGTGGCCACGTCCCAAGACGACTGT
I L P Q Q Y L R P V E D V A T S Q D D C
TACAAGTTCGCTGTCTCACAGTCATCCACGGGCACTGTTATGGGAGCCGTCATCATGGAA
Y K F A V S Q S S T G T V M G A V I M E
GGTTTCTATGTCGTCTTCGATCGAGCCCGAAAGCGAATTGGCTTTGCTGTGAGCGCTTGC
G F Y V V F D R A R K R I G F A V S A C
CATGTGCACGATGAGTTCAGGACGGCGGCAGTGGAAGGTCCGTTTGTTACGGCAGACATG
H V H D E F R T A A V E G P F V T A D M
GAAGACTGTGGCTACAACATTCCCCAGACAGATGAGTCAACACTTATGACCATAGCCTAT
E D C G Y N I P Q T D E S T L M T I A Y
GTCATGGCGGCCATCTGCGCCCTCTTCATGTTGCCACTCTGCCTCATGGTATGTCAGTGG
V M A A I C A L F M L P L C L M V C Q W
CGCTGCCTGCGTTGCCTGCGCCACCAGCACGATGACTTTGCTGATGACATCTCCCTGCTC
R C L R C L R H Q H D D F A D D I S L L
AAGTAAGGAGGCTCGTGGGCAGATGATGGAGACGCCCTGGACCACATCTGGGTGGTTCC
K
CTTTGGTCACATGAGTTGGAGCTATGGATGGTACCTGTGGCCAGAGCACCTCAGGACCCT
CACCAACCTGCCAATGCTTCTGGCGTGACAGAACAGAGAAATCAGGCAAGCTGGATTACA
GGGCTTGCACCTGTAGGACACAGGAGAGGGAAGGAAGCAGCGTTCTGGTGGCAGGAATAT
CCTTAGGCACCACAACTTGAGTTGGAAATTTTGCTGCTTGAAGCTTCAGCCCTGACCCT
CTGCCCAGCATCCTTTAGAGTCTCCAACCTAAAGTATTCTTTATGTCCTTCCAGAAGTAC
TGGCGTCATACTCAGGCTACCCGGCATGTGTCCCTGTGGTACCCTGGCAGAGAAAGGGCC
AATCTCATTTCCCTGCTGGCCAAAGTCAGCAGAAGAAGGTGAAGTTTGCCAGTTGCTTTAG
TGATAGGGACTGCAGACTCAAGCCTACACTGGTACAAAGACTGCGTCTTGAGATAAACAA
GAA

FIGURE 5

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1 MAQALPWLLLWMGAGVLPAGHTQHGIPLRLSGLGGAPLGLRLPRETDEE 50
  || || |||||.|.|.||| || ||||| ||||| ||||| ||||| |||||
1 MAPALHWLLLWVGSGMLPAQGTHLGIRLPLRSGLAGPPLGLRLPRETDEE 50

51 PEEPGRRGSFVEMVDNLRGKSGQGYVEMTVGSPQTLNILVDTGSSNFA 100
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
51 SEEPGRRGSFVEMVDNLRGKSGQGYVEMTVGSPQTLNILVDTGSSNFA 100

101 VGAAPHPFLHRYYQRQLSSTYRDLRKGVYVPYTQGWEGELGTDLVSI PH 150
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
101 VGAAPHPFLHRYYQRQLSSTYRDLRKGVYVPYTQGWEGELGTDLVSI PH 150

151 GPNVTVRANIAAITESDKFFINGSNWEGILGLAYAEIARPDDSLEPFFDS 200
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
151 GPNVTVRANIAAITESDKFFINGSNWEGILGLAYAEIARPDDSLEPFFDS 200

201 LVKQTHVPNLFSLQLCGAGFPLNQSEVLASVGGSMIIGGIDHSLYTGSLW 250
  ||||| :||: ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
201 LVKQTHIPNIFSLQLCGAGFPLNQTEALASVGGSMIIGGIDHSLYTGSLW 250

251 YTPIRREWYYEVIIVRVEINGQDLKMDCKEYNYDKSIVDSGTTNLR LPKK 300
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
251 YTPIRREWYYEVIIVRVEINGQDLKMDCKEYNYDKSIVDSGTTNLR LPKK 300

301 VFEEAVKSIKAASSTEKFPDGFWLGEQLVCWQAGTTPWNIFPVISLY LMG 350
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
301 VFEEAVKSIKAASSTEKFPDGFWLGEQLVCWQAGTTPWNIFPVISLY LMG 350

351 EVTNQSFRTITILPQQYLRPVEDVATSQDDCYKFAISQSSTGTVMGAVIME 400
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| :||| ||||| |||||
351 EVTNQSFRTITILPQQYLRPVEDVATSQDDCYKFAVSQSSTGTVMGAVIME 400

401 GFYVVFDRARKRIGFAVSACHVHDEFRTAAVEGPFVTLDMEDCGYNIPQT 450
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
401 GFYVVFDRARKRIGFAVSACHVHDEFRTAAVEGPFVTADMEDCGYNIPQT 450

451 DESTLMTIAYVMAAICALFMLPLCLMVCQWRCLRCLRQQHDDFADDISLL 500
  ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
451 DESTLMTIAYVMAAICALFMLPLCLMVCQWRCLRCLRHQHDDFADDISLL 500

501 K 501
  |
501 K 501
```


FIGURE 6A

ATGGCTAGCATGACTGGTGGACAGCAAATGGGTCGCGGATCCACCCAGCACGGCATCCGG
M A S M T G G Q Q M G R G S T Q H G I R
CTGCCCCCTGCGCAGCGGCCTGGGGGGCGCCCCCTGGGGCTGCGGCTGCCCCGGGAGACC
L P L R S G L G G A P L G L R L P R E T
GACGAAGAGCCCGAGGAGCCCGGCCGGAGGGGCAGCTTTGTGGAGATGGTGGACAACCTG
D E E P E E P G R R G S F V E M V D N L
AGGGGCAAGTCGGGGCAGGGCTACTACGTGGAGATGACCGTGGGCAGCCCCCGCAGACG
R G K S G Q G Y Y V E M T V G S P P Q T
CTCAACATCCTGGTGGATACAGGCAGCAGTAACTTTGCAGTGGGTGCTGCCCCCACCCC
L N I L V D T G S S N F A V G A A P H P
TTCCTGCATCGCTACTACCAGAGGCAGCTGTCCAGCACATACCGGGACCTCCGGAAGGGC
F L H R Y Y Q R Q L S S T Y R D L R K G
GTGTATGTGCCCTACACCCAGGGCAAGTGGGAAGGGGAGCTGGGCACCGACCTGGTAAGC
V Y V P Y T Q G K W E G E L G T D L V S
ATCCCCCATGGCCCCAACGTCACGTGCGTGCCAACATTGCTGCCATCACTGAATCAGAC
I P H G P N V T V R A N I A A I T E S D
AAGTTCTTCATCAACGGCTCCAACCTGGGAAGGCATCCTGGGGCTGGCCTATGCTGAGATT
K F F I N G S N W E G I L G L A Y A E I
GCCAGGCCTGACGACTCCCTGGAGCCTTTCTTTGACTCTCTGGTAAAGCAGACCCACGTT
A R P D D S L E P F F D S L V K Q T H V
CCCAACCTCTTCTCCCTGCAGCTTTGTGGTGCTGGCTTCCCCCTCAACCAGTCTGAAGTG
P N L F S L Q L C G A G F P L N Q S E V
CTGGCCTCTGTGCGGAGGGAGCATGATCATTTGGAGGTATCGACCACTCGCTGTACACAGGC
L A S V G G S M I I G G I D H S L Y T G
AGTCTCTGGTATACACCCATCCGGCGGGAGTGGTATTATGAGGTCATCATTTGTGCGGGTG
S L W Y T P I R R E W Y Y E V I I V R V
GAGATCAATGGACAGGATCTGAAAATGGACTGCAAGGAGTACAACCTATGACAAGAGCATT
E I N G Q D L K M D C K E Y N Y D K S I
GTGGACAGTGGCACCACCAACCTTCGTTTGCCCAAGAAAGTGTTTGAAGCTGCAGTCAAA
V D S G T T N L R L P K K V F E A A V K
TCCATCAAGGCAGCCTCCTCCACGGAGAAGTTCCCTGATGGTTTCTGGCTAGGAGAGCAG
S I K A A S S T E K F P D G F W L G E Q
CTGGTGTGCTGGCAAGCAGGCACCACCCCTTGGAACATTTTCCCAGTCATCTCACTCTAC
L V C W Q A G T T P W N I F P V I S L Y
CTAATGGGTGAGGTTACCAACCAGTCCTTCCGCATCACCATCCTTCCGCAGCAATACCTG
L M G E V T N Q S F R I T I L P Q Q Y L
CGGCCAGTGGGAAGATGTGGCCACGTCCCAAGACGACTGTTACAAGTTTGCCATCTCACAG
R P V E D V A T S Q D D C Y K F A I S Q
TCATCCACGGGCACTGTTATGGGAGCTGTTATCATGGAGGGCTTCTACGTTGTCTTTGAT
S S T G T V M G A V I M E G F Y V V F D

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Title: "Alzheimer's Disease Secretase, APP Substrates
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Fig. 6B
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FIGURE 6B

CGGGCCCGAAAACGAATTGGCTTTGCTGTCAGCGCTTGCCATGTGCACGATGAGTTCAGG
R A R K R I G F A V S A C H V H D E F R
ACGGCAGCGGTGGAAGGCCCTTTTGTACCTTGGACATGGAAGACTGTGGCTACAACATT
T A A V E G P F V T L D M E D C G Y N I
CCACAGACAGATGAGTCATGA
P Q T D E S *

FIGURE 7A

ATGGCTAGCATGACTGGTGGACAGCAAATGGGTCGCGGATCGATGACTATCTCTGACTCT
M A S M T G G Q Q M G R G S M T I S D S
CCGCGTGAACAGGACGGATCCACCCAGCACGGCATCCGGCTGCCCCCTGCGCAGCGGCCTG
P R E Q D G S T Q H G I R L P L R S G L
GGGGGCGCCCCCTGGGGCTGCGGCTGCCCCGGGAGACCGACGAAGAGCCCGAGGAGCCC
G G A P L G L R L P R E T D E E P E E P
GGCCGGAGGGGCAGCTTTGTGGAGATGGTGGACAACCTGAGGGGCAAGTCGGGGCAGGGC
G R R G S F V E M V D N L R G K S G Q G
TACTACGTGGAGATGACCGTGGGCAGCCCCCGCAGACGCTCAACATCCTGGTGGATACA
Y Y V E M T V G S P P Q T L N I L V D T
GGCAGCAGTAACTTTGCAGTGGGTGCTGCCCCCACCCCTTCCTGCATCGCTACTACCAG
G S S N F A V G A A P H P F L H R Y Y Q
AGGCAGCTGTCCAGCACATACCGGGACCTCCGGAAGGGCGTGTATGTGCCCTACACCCAG
R Q L S S T Y R D L R K G V Y V P Y T Q
GGCAAGTGGGAAGGGGAGCTGGGCACCGACCTGGTAAGCATCCCCCATGGCCCCAACGTC
G K W E G E L G T D L V S I P H G P N V
ACTGTGCGTGCCAACATTGCTGCCATCACTGAATCAGACAAGTTCTTCATCAACGGCTCC
T V R A N I A A I T E S D K F F I N G S
AACTGGGAAGGCATCCTGGGGCTGGCCTATGCTGAGATTGCCAGGCCTGACGACTCCCTG
N W E G I L G L A Y A E I A R P D D S L
GAGCCTTTCTTTGACTCTCTGGTAAAGCAGACCCACGTTCCCAACCTCTTCTCCCTGCAG
E P F F D S L V K Q T H V P N L F S L Q
CTTTGTGGTGCTGGCTTCCCCCTCAACCAGTCTGAAGTGCTGGCCTCTGTCTGGAGGGAGC
L C G A G F P L N Q S E V L A S V G G S
ATGATCATTGGAGGTATCGACCACTCGCTGTACACAGGCAGTCTCTGGTATACACCCATC
M I I G G I D H S L Y T G S L W Y T P I
CGGCGGGAGTGGTATTATGAGGTCATCATTGTGCGGGTGGAGATCAATGGACAGGATCTG
R R E W Y Y E V I I V R V E I N G Q D L
AAAATGGACTGCAAGGAGTACAACCTATGACAAGAGCATTGTGGACAGTGGCACCACCAAC
K M D C K E Y N Y D K S I V D S G T T N
CTTCGTTTGCCCAAGAAAGTGTTTGAAGCTGCAGTCAAATCCATCAAGGCAGCCTCCTCC
L R L P K K V F E A A V K S I K A A S S
ACGGAGAAGTTCCCTGATGGTTTCTGGCTAGGAGAGCAGCTGGTGTGCTGGCAAGCAGGC
T E K F P D G F W L G E Q L V C W Q A G
ACCACCCCTTGGAACATTTTCCCAGTCATCTCACTCTACCTAATGGGTGAGGTTACCAAC
T T P W N I F P V I S L Y L M G E V T N
CAGTCCTTCCGCATCACCATCCTTCCGCAGCAATACCTGCGGCCAGTGGAAGATGTGGCC
Q S F R I T I L P Q Q Y L R P V E D V A
ACGTCCCAAGACGACTGTTACAAGTTTGCCATCTCACAGTCATCCACGGGCACTGTTATG
T S Q D D C Y K F A I S Q S S T G T V M

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Fig. 7B
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FIGURE 7B

GGAGCTGTTATCATGGAGGGCTTCTACGTTGTCTTTGATCGGGCCCGAAAACGAATTGGC
G A V I M E G F Y V V F D R A R K R I G
TTTGCTGTCAGCGCTTGCCATGTGCACGATGAGTTCAGGACGGCAGCGGTGGAAGGCCCT
F A V S A C H V H D E F R T A A V E G P
TTTGTCACCTTGGACATGGAAGACTGTGGCTACAACATTCCACAGACAGATGAGTCATGA
F V T L D M E D C G Y N I P Q T D E S *

FIGURE 8A

ATGACTCAGCATGGTATTCGTCTGCCACTGCGTAGCGGTCTGGGTGGTGCTCCACTGGGT
M T Q H G I R L P L R S G L G G A P L G -
CTGCGTCTGCCCCGGGAGACCGACGAAGAGCCCCGAGGAGCCCCGGCCGGAGGGGCAGCTTT
L R L P R E T D E E P E E P G R R G S F -
GTGGAGATGGTGGACAACCTGAGGGGCAAGTCGGGGCAGGGCTACTACGTGGAGATGACC
V E M V D N L R G K S G Q G Y Y V E M T -
GTGGGCAGCCCCCGCAGACGCTCAACATCCTGGTGGATACAGGCAGCAGTAACTTTGCA
V G S P P Q T L N I L V D T G S S N F A -
GTGGGTGCTGCCCCCACCCTTCCTGCATCGCTACTACCAGAGGCAGCTGTCCAGCACA
V G A A P H P F L H R Y Y Q R Q L S S T -
TACCGGGACCTCCGGAAGGGCGTGTATGTGCCCTACACCCAGGGCAAGTGGGAAGGGGAG
Y R D L R K G V Y V P Y T Q G K W E G E -
CTGGGCACCGACCTGGTAAGCATCCCCCATGGCCCCAACGTCACCTGTGCGTGCCAACATT
L G T D L V S I P H G P N V T V R A N I -
GCTGCCATCACTGAATCAGACAAGTTCTTCATCAACGGCTCCAACCTGGGAAGGCATCCTG
A A I T E S D K F F I N G S N W E G I L -
GGGCTGGCCTATGCTGAGATTGCCAGGCCTGACGACTCCCTGGAGCCTTTCTTTGACTCT
G L A Y A E I A R P D D S L E P F F D S
CTGGTAAAGCAGACCCACGTTCCCAACCTCTTCTCCCTGCAGCTTTGTGGTGCTGGCTTC
L V K Q T H V P N L F S L Q L C G A G F -
CCCCTCAACCAGTCTGAAGTGCTGGCCTCTGTCTGGAGGGAGCATGATCATTGGAGGTATC
P L N Q S E V L A S V G G S M I I G G I -
GACCACTCGCTGTACACAGGCAGTCTCTGGTATACACCCATCCGGCGGGAGTGGTATTAT
D H S L Y T G S L W Y T P I R R E W Y Y -
GAGGTCATCATTGTGCGGGTGGAGATCAATGGACAGGATCTGAAAATGGACTGCAAGGAG
E V I I V R V E I N G Q D L K M D C K E
TACAACTATGACAAGAGCATTGTGGACAGTGGCACCACCAACCTTCGTTTGCCCAAGAAA
Y N Y D K S I V D S G T T N L R L P K K -
GTGTTTGAAGCTGCAGTCAAATCCATCAAGGCAGCCTCCTCCACGGAGAAGTTCCCTGAT
V F E A A V K S I K A A S S T E K F P D -
GGTTTCTGGCTAGGAGAGCAGCTGGTGTGCTGGCAAGCAGGCACCACCCCTTGGAACATT
G F W L G E Q L V C W Q A G T T P W N I -
TTCCCAGTCATCTCACTCTACCTAATGGGTGAGGTTACCAACCAGTCCTTTTCGCATCACC
F P V I S L Y L M G E V T N Q S F R I T -
ATCCTTCCGCAGCAATACCTGCGGCCAGTGGAAGATGTGGCCACGTCCCAAGACGACTGT
I L P Q Q Y L R P V E D V A T S Q D D C -

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Fig. 8B

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FIGURE 8B

TACAAGTTTGCCATCTCACAGTCATCCACGGGCACTGTTATGGGAGCTGTTATCATGGAG
Y K F A I S Q S S T G T V M G A V I M E -
GGCTTCTACGTTGTCTTTGATCGGGCCCGAAAACGAATTGGCTTTGCTGTCAGCGCTTGC
G F Y V V F D R A R K R I G F A V S A C -
CATTAG
H *

FIGURE 9

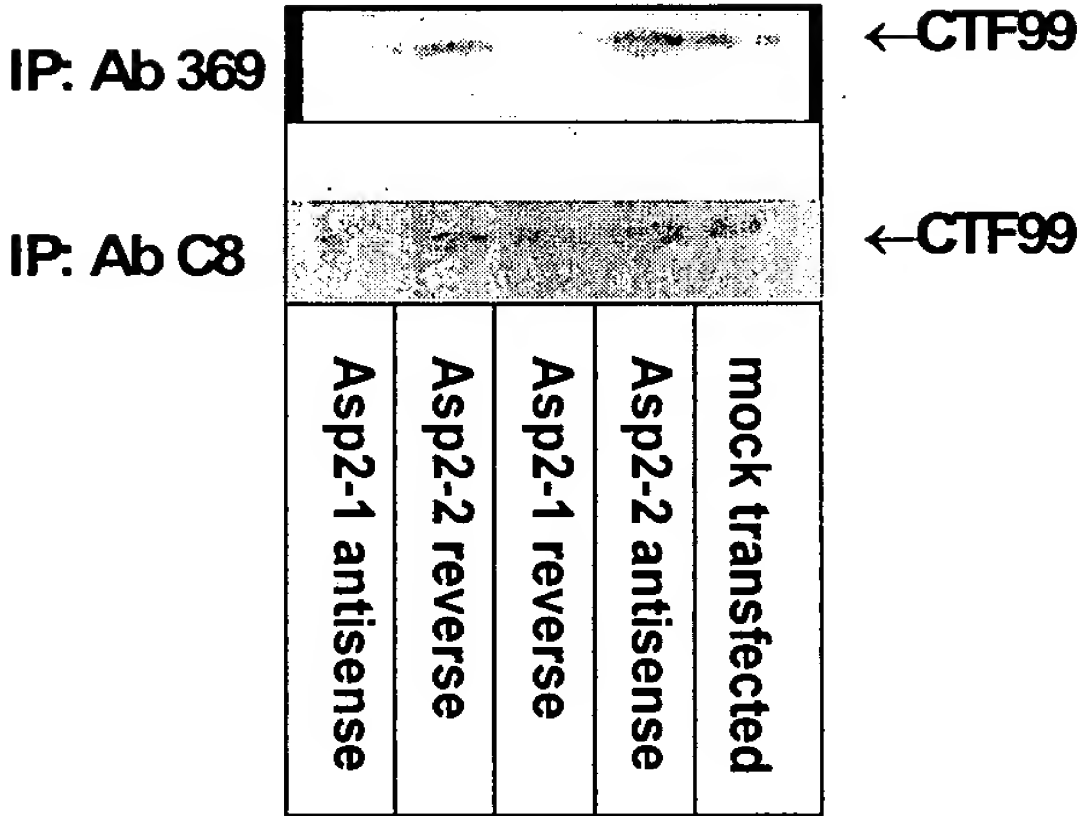


FIGURE 10

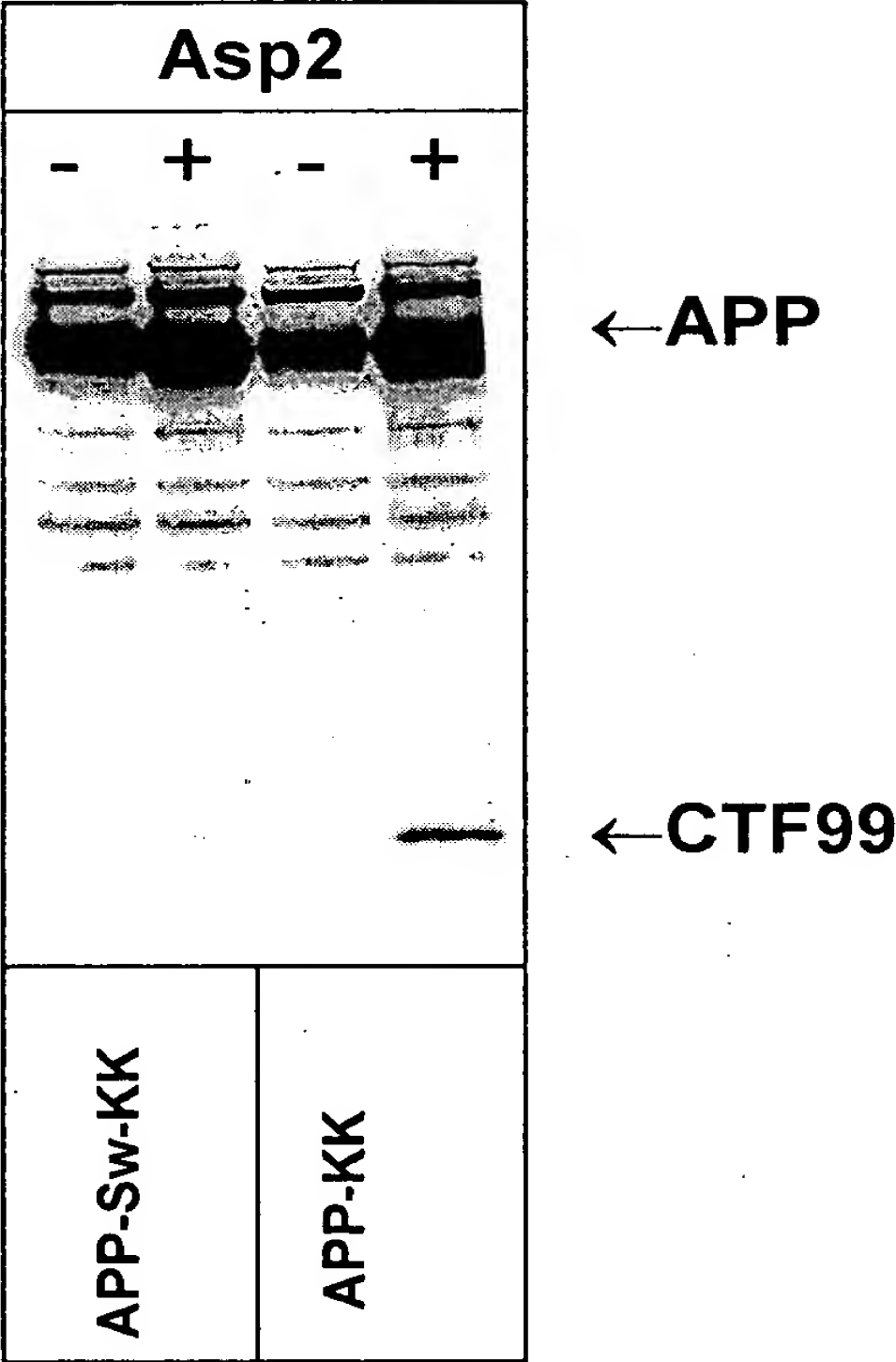


FIGURE 11

MAQALPWLLLWMGAGVLPAHG TQHGIRLPLRSGLGGA~~PLGLRLPRETDEE~~
PEEPGRRGSFVEMVDNLRGKSGQGYVEMTVGSP~~PQTLNILVDTGSSNFA~~
VGAAPHPFLHRYYQRQLSSTYRDLRKG~~VYVPYTQGWEGELGTDLVSI~~PH
GPNVTVRANIAAITESDKFFINGSN~~WEGILGLAYAEIARPDDSLEPFFDS~~
LVKQTHVPNLFSLQLCGAGFPLNQSEVLASVGG~~SMIIGGIDHSLYTGSLW~~
YTPIRREWYYEVIIVRVEINGQDLKMDCKEY~~NYDKSIVDSGTTNLRRLPKK~~
VFEAAVKSIIKAASSTEKFPDGF~~WLGEQLVCWQAGTTPWNI~~FPVISLYLMG
EVTNQSF~~RITILPQQYLRPVEDVATSQDDCYKFAISQSSTGTVMGAVIME~~
GFYVVFDRARKRIGFAVSACHVHDEFRTAAVEGPFV~~TLDMEDCGYNIPQT~~
DES

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Fig. 12

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FIGURE 12

MAQALPWLLLWMGAGVLP AHG TQHGIRLPLRSGLG GAPLGLRLPRETDEE
PEEPGRRGSFVEMVDNLRGKSGQGYVEMTVGSP PQTLNILVDTGSSNFA
VGAAPHPFLHRY YQRQLSSTYRDLRKG VYVPYTQ GKWEGELGTDLVSI PH
GPNVTVRANIAAITESDKFFINGSN WEGILGLAYAEIARPDD SLEPFFDS
LVKQTHVPNLFS LQLCGAGFPLNQSEVLASVGGSMI IGGIDHSLYTGSLW
YTPIRREWYYEVI IVRVEINGQDLKMDCKEYNYDKSIVDSGTTNLRLPKK
VFEAAVKS IKAASSTEKFPDGFWLGEQLVCWQAGTTPWNIFPVISLYLMG
EVTNQSF RITILPQQYLRPVEDVATSQDDCYKFAISQSSTGTVMGAVIME
GFYVVFDRARKRIGFAVSACHVHDEFRTAAVEGPFVTLDMEDCGYNIPQT
DESHHHHHH